PER	MIT NO.:	AGENCY USE ONLY Date Rec'd.:	Amount Rec'd.:	Check No.:	Rec'd By:	
MTG-0101		10/29/13	4600	1#300980	be be	
	V Mon En	tana Depart  VIRONME  R PROTECTION	tment of	PERMITING DE ON	CRIVEDIA 292013 EL	
FORM	Notice of Intent (N	OI) for Mon	tana Pollutio	n Discharge E	limination	
NOI	System Applica	•			ı	
	- V		g Operation		Hosenee	
The Application form is to be completed by the owner or operator of a Concentrated Animal Feeding Operation (CAFO) or Aquatic Animal Production Facility. Please read the attached instructions before completing this form. You must print or type legibly; forms that are not legible or are not complete will be returned. You must maintain a copy of the completed application form for your records.  Section A - Application Status (Check one):						
	,	. 1 . 1 . 1 . 1 . 1 . 1	45.5			
New		tion submitted for	this site.		VA 1877	
Resubmitted  Renewal		MTG MTG <sup>0</sup> 1 0 1	6 1			
Modification		er: MTG		10/30/13	3240.f	
	or Site Information (Sec	e instruction sheet.)	:			
Site Name Billings L	ivestock Commission					
Site Location 2443 N	l Frontage Rd.					
Nearest City or Town			County Yello			
Latitude 45 48.742'	N	Longit	tude 108 25.30	3' W		
Date Facility began operation? 1976						
Is this facility or site located on Indian Lands?  Yes  No						
Section C - Applica	nt (Owner/Operator) In	nformation:				
Owner or Operator N	lame Patrick Goggins	VVilliam Cook, M	lanager			
Mailing Address P.C	D. Box 31533					
City, State, and Zip C	Code Billings, MT 5910	)7				
Phone Number 406-	245-4151					
Is the person listed al	bove the owner?  Yes	□ No				
Status of Applicant (Check one)   Federal   State   Private   Public   Other (specify)						

~	E E I	Y . Y	~	·	
Section	D - Existing or Pen	ding Permits, (	Certifications, or	Approvals: None	
	DES MTG010161			RCRA	
PSD (Air Emissions) Other					
<u> </u>	Permit (dredge & fill	)		Other	
Sectio	n E – Standard Indu	ıstrial Classific	cation (SIC) Cod	es:	
Provi	de at least one SIC code	which best refle	ects the activity of	project described in Section H.	
Code	A. P	rimary	Code	B. Second	
1	5154 Stockyard	\$	2		
Code	C.	Third	Code	D. Fourth	
3			3		
C	E3 E3 'B'4 C1'4	0 4 4 D	/No. • / •		
l	F - Facility or Site (				
	and Title, or Position		Jook, Manager		
1	Address P.O. Box 3				
City, St	ate, and Zip Code	ings, MT 591	07		
Phone N	Number 406	5-245-4151			
Section	G – Receiving Surf	ace Waters(s):			
	Outfall/Discharge Lo	ocations: For eac	h outfall, List latitu	de and longitude to the nearest second and	7
			name of the receiv		
8	1		i i		
	Outfall Number	Łatitude	Longitude	Receiving Surface Waters	
	001	45 49.021'N	108 25.401'W	Coulson Ditch	
	001 002				7
	001 002 003	45 49.021'N	108 25.401'W	Coulson Ditch	
	001 002 003 004	45 49.021'N	108 25.401'W	Coulson Ditch	
	001 002 003	45 49.021'N	108 25.401'W	Coulson Ditch	
	001 002 003 004	45 49.021'N	108 25.401'W	Coulson Ditch	
и .	001 002 003 004 005	45 49.021'N 45 49.419'N extending one r	108 25.401'W 108 25.663'W mile beyond the pro	Coulson Ditch Yellowstone River  pperty boundaries or the site activity identified	
Section	001 002 003 004 005 tach a topographic map B depicting the facility	45 49.021'N 45 49.419'N  extending one ror activity bound	108 25.401'W 108 25.663'W nile beyond the prodaries, major draina	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters,	
Section above. A	001 002 003 004 005  tach a topographic map B depicting the facility Also identify the specific	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	
Section above. A	001 002 003 004 005 tach a topographic map B depicting the facility	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	
Section above. A	001 002 003 004 005  tach a topographic map B depicting the facility Also identify the specific	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	
Section above. A	001 002 003 004 005  tach a topographic map B depicting the facility Also identify the specific	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	
Section above. A	001 002 003 004 005  tach a topographic map B depicting the facility Also identify the specific	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	
Section above. A	001 002 003 004 005  tach a topographic map B depicting the facility Also identify the specific	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	
Section above. A	001 002 003 004 005  tach a topographic map B depicting the facility Also identify the specific	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	
Section above. A	001 002 003 004 005  tach a topographic map B depicting the facility Also identify the specific	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	
Section above. A	001 002 003 004 005  tach a topographic map B depicting the facility Also identify the specific	45 49.021'N 45 49.419'N  extending one ror activity bounce location of the	108 25.401'W 108 25.663'W  mile beyond the production area, ar	Coulson Ditch Yellowstone River  operty boundaries or the site activity identified age patterns, and the receiving surface waters, and land application area(s).	

Section H – Concentration Animal Feeding Operation Characteristics Waste Production, Storage and Disposal

	Animal type	Number in Open Confinement	Number Housed Under Roof
	Mature Dairy Cows		
	Dairy Heifers		
	Veal Calves		
Ø	Cattle (not dairy or veal)	3000	
	Swine (55 lbs or over)		
	Swine (55 lbs or under)		
Ø	Horses	1000	
	Sheep or Lambs		
	Turkeys		
	Chickens (broilers)		
	Chickens (layers)		
	Ducks		
	Other (Specify:)		
	Other (Specify:)		
	Other (Specify:)		

[[	J Other (Specify:	)			
	Other (Specify:	)			
	Other (Specify:	)			
	itter and/or Wastewater Promanure, litter, and process wa			cility?	
Solid (tons)	•	_	_ Liquid/Slurry (gallons	•	
	ted, how many acres of land used tewater generated from the fareacter.  Acr	ncility? (Note: De		*	, ,
	manure, litter, and process wa			per year? (estimated) Solid	
	ontainment structures built after Do the waste containment structures built bu	uctures have 10 ructures have 4 f	feet of separation between	ne pond bottom and any gro	

	Type of Containment/Storage	Total Capacity	Units (gallons or tons)	Days of Storage
	☐ Anaerobic Lagoon	Total capacity	Onico (Banonio di cono)	Days or octorage
	☑ Storage Pond #1	1,138,123	gallons	365
	☐ Storage Pond #2			
	☐ Storage Pond #3			
	☐ Storage Pond #4			
	☐ Storage Pond #5			
	☐ Above Ground Storage Tank			
	☐ Below Ground Storage Tank #1			
	☐ Below Ground Storage Tank #2			
	☐ Underfloor Pits			
	☐ Roofed Storage Shed			
	☐ Concrete Pad			
	☐ Impervious Soil Pad			
	☐ Other (Specify:)			
	☐ Other (Specify: )			
Dhamin	al Data for CAFO		l .	
develope One) ☑ Doe Date	artment (Form NMP). Check the box below ed in accordance with ARM 17.30.1334 and as the facility have an NMP? e NMP was developed: 2009 e NMP was last modified:2013  P has not been prepared; provide detailed expending the second of the seco	d implemented upor		
Section	I – Supplemental Information			

#### Section J - CERTIFICATION

#### Permittee Information:

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

# All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print) William Couk	
B. Title (Type or Print)  On a q er	C. Phone No. シリケーリリン
D. Signature Willin Cod	E. Date Signed

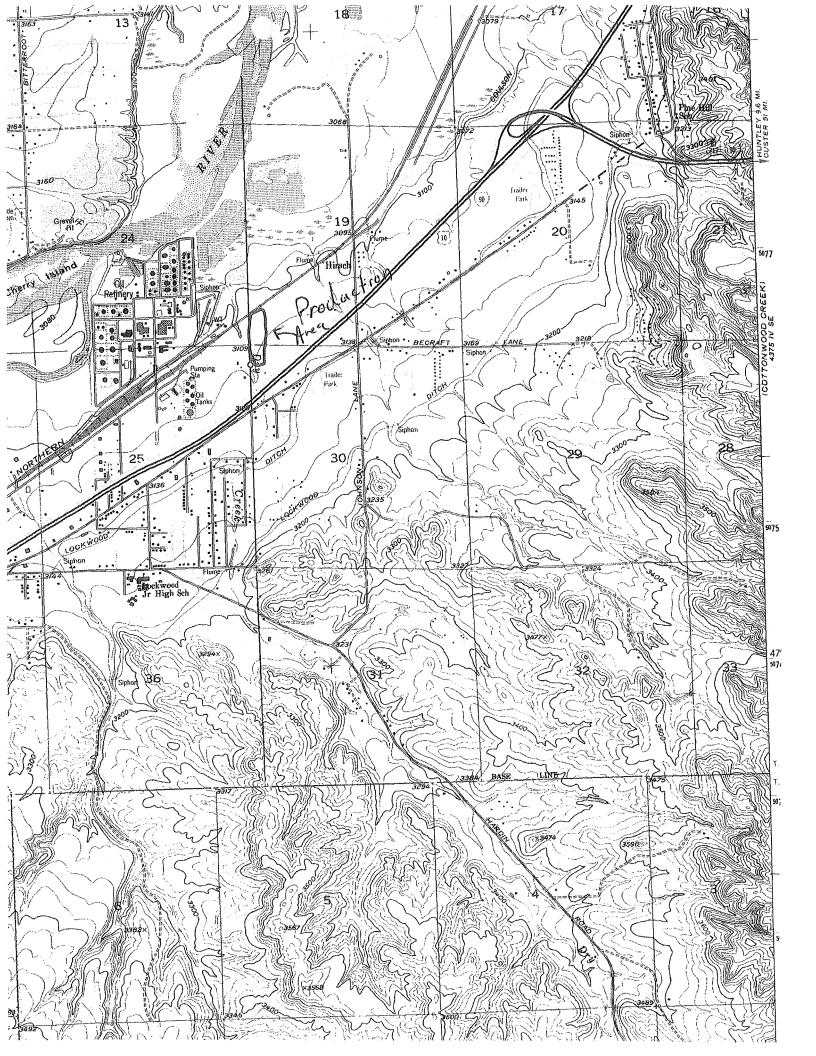
The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form (NOI) and the applicable fee to:

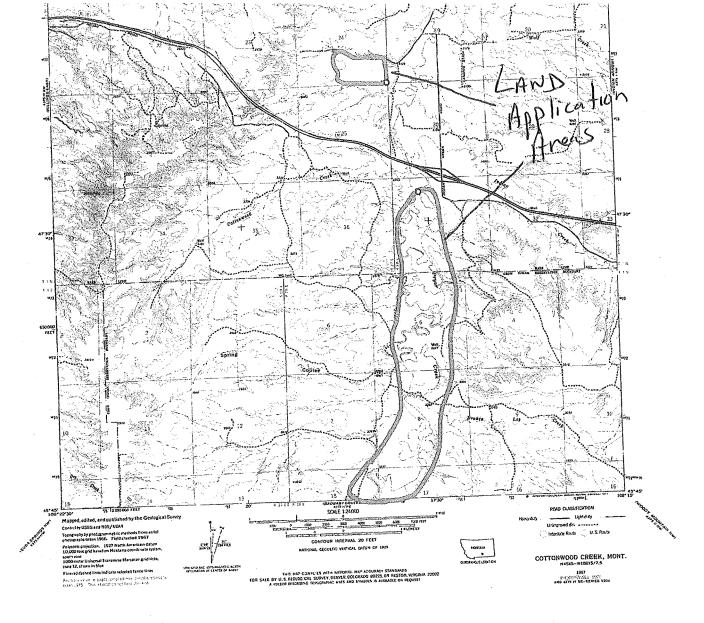
Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

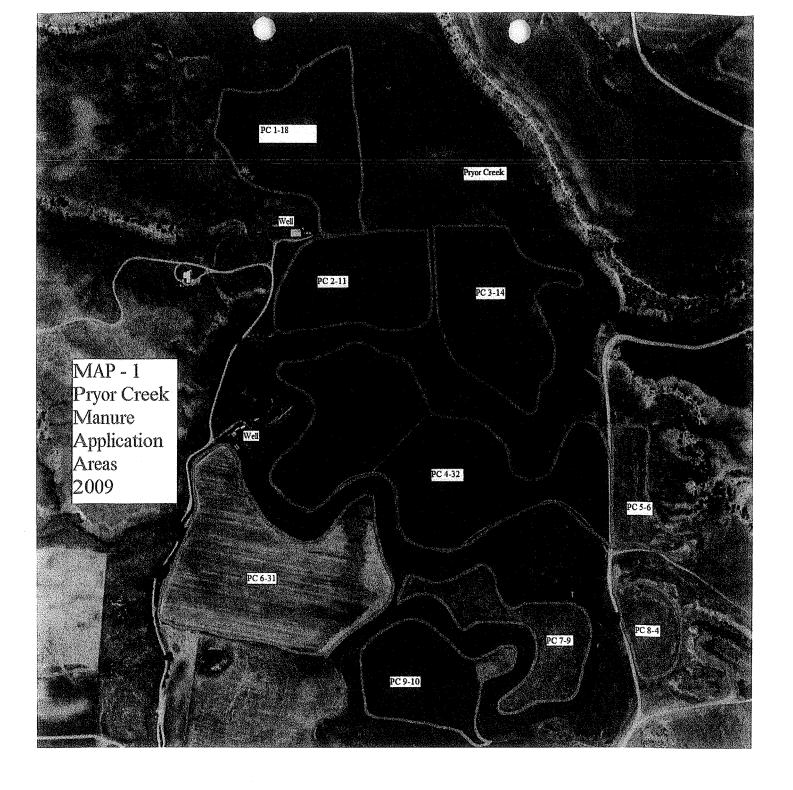
RECEIVED

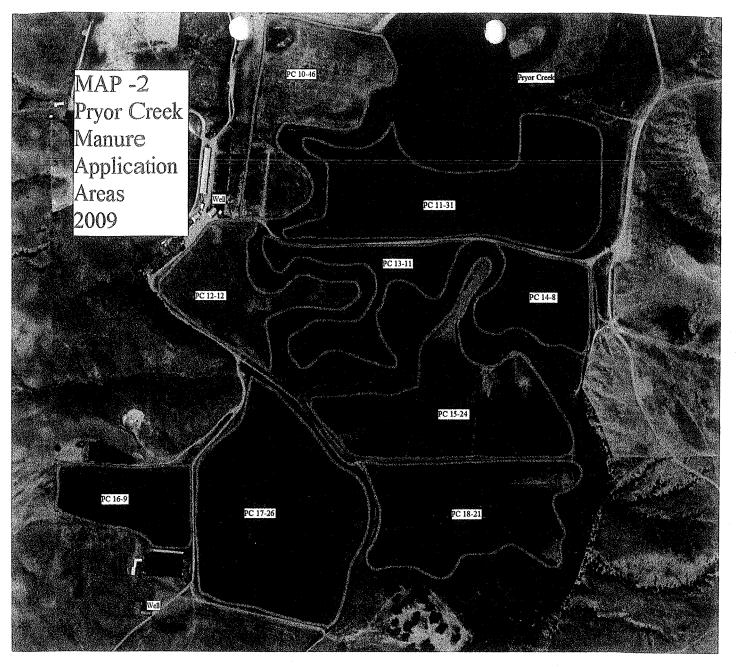
OCT 29 2013

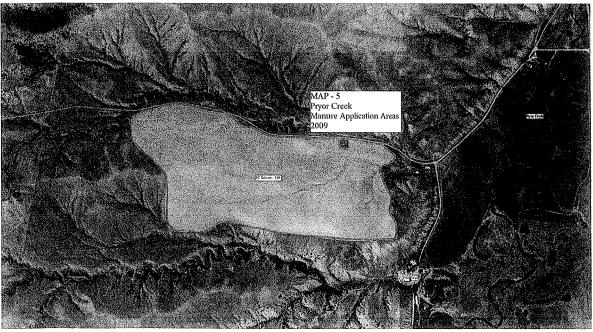
DEQWIPB
PERMITTING & COMPLIANCE DIV.

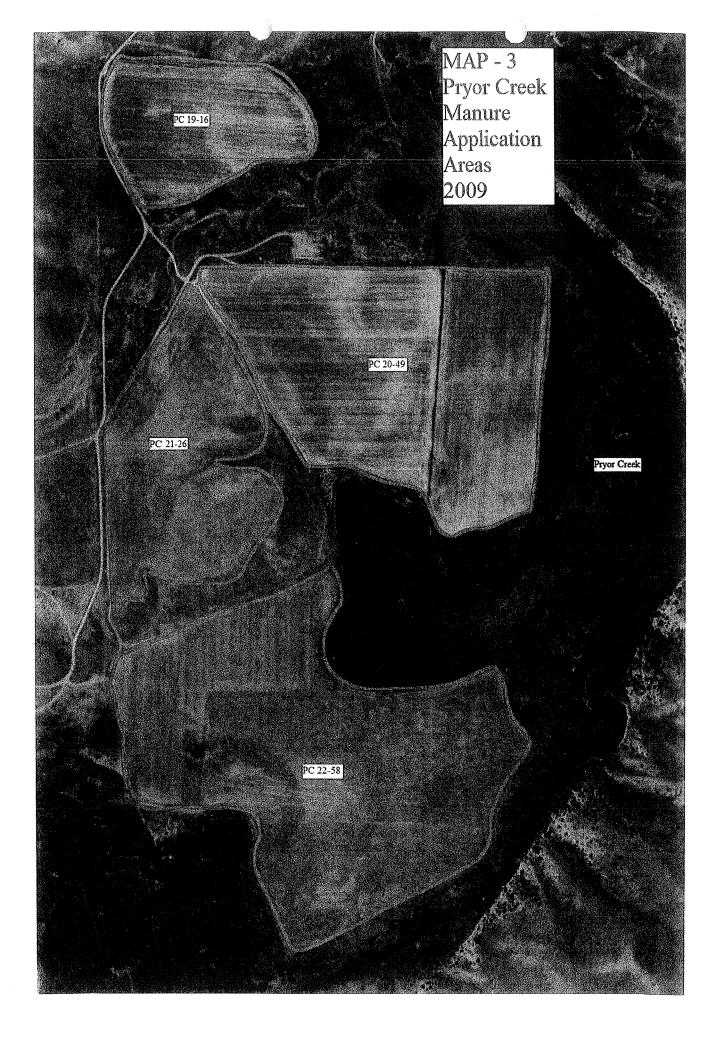


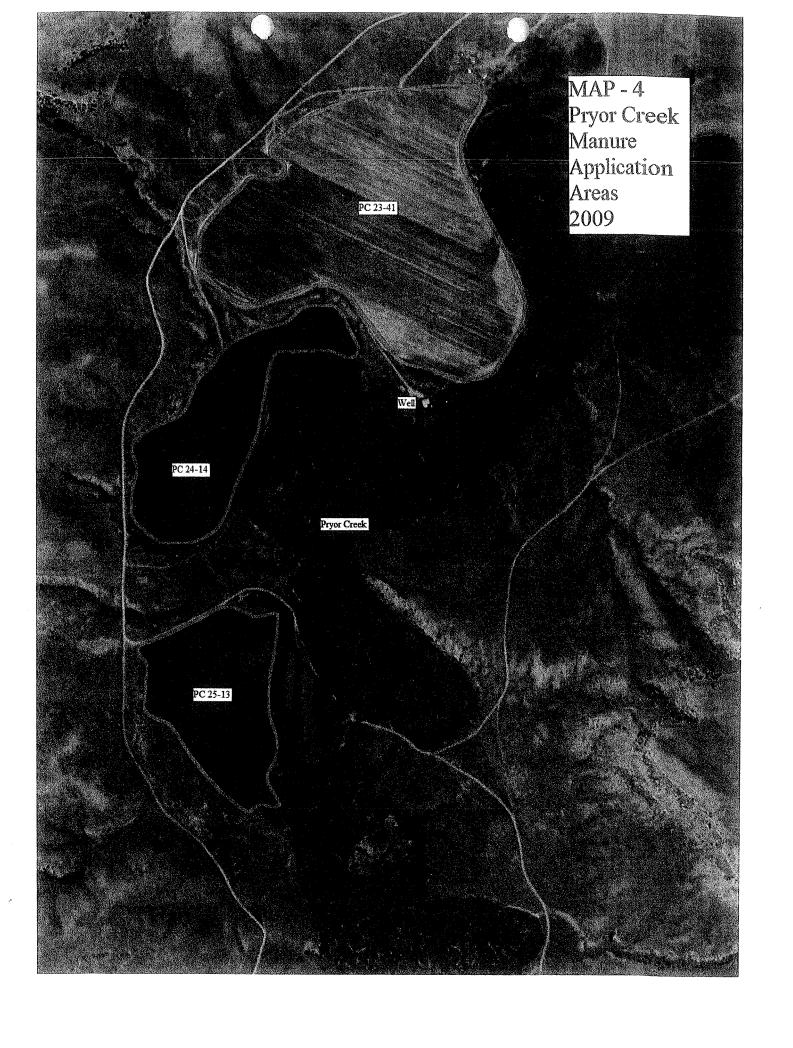












AGENCY USE ONLY PERMIT NO.: Amount Rec'd .: Rec'd By: MTG01016 \$ 600 #30098 12) Montana Department of WATER PROTECTION BUREAU FORM **Nutrient Management Plan** NMP READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For filling out Form NMP," found at the back of this form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your NOI-CAFO. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. The 2013 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or <a href="http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp">http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp</a> Section A - NMP Status: **New** No prior NMP submitted for this site. Resubmitted Previous NMP found incomplete. ✓ Modification Change or update to existing NMP. -√New 2013 New 2013 version of NMP. Section B – Facility Information: Facility Name Billings Livestock Commission Facility Location 2443 N Frontage Rd CountyYellowstone Nearest City of Town Billings Section C – Applicant (Owner/Operator Information): Owner or Operator Name Patrick Goggins--William Cook, Manager Mailing Address P.O. Box 31533 City, State, and Zip code Billings, MT 59107 Facility Phone Number 406-245-4151

**Email** 

Sectio	n D – NMP Minimum Elements:						
	1. Livestock Statistics						
	Animal Type and number of animals	# of Days on Site (per year)	Annual Manure Production (tons, cu. yds. or gal				
	1. 67000 cattle ave wt 800 lbs	2 days	373 tons				
	2. 10,000 horses	1 day	52 tons				
	3.						
	4.						
	5.						
	6.						
	7.						
	8.						
Metho	d used for estimating annual man	ure production: Facilities Handbook, Third Edition,	1003 Pa 2 1				
Scrape b. Fre	ed manure piles are stored within equency of Manure Removal from	·					
	his manure temporarily stored in o then how and where?	any location other than the confineme	ent area? Yes No				
If y	If so then how and where?  d. Is manure stored on impervious surface? Yes No If yes, describe type and characteristics of this surface: Concrete						

3. Waste Control Str	3. Waste Control Structures						
Waste Control Length Width Depth Volume Number of							
Structures	(ft.)	(ft.)	(ft.)	(cubic ft.	days of		
(name/type)				or gallons)	storage		
1.Storage Pond 1	147	115	9	152145 cuft	365		
<sup>2</sup> ·E diversion berm	1321	2	1 height				
<sup>3</sup> ·N diversion berm	511	4	3 height				
4.							
5.							
6.							
7.							
8.							
9.							
10.					- The second		
11.							
12.							

What is the 24 hr. 25 yr. storm event at this	s facility <sup>2.7</sup>
Production area: 14.6 acres.	Type of lot (dirt or paved):
<del>-</del> <del>-</del>	AFO that enters confinement areas and waste storage,
conveyance, or treatment structures: 0	acres.
What is the annual precipitation during the	e critical storage period 6
How much freeboard do the pond(s) have _	
4. Disposal of Dead Animals.	
Describe how dead animals are disposed of Dead animals are hauled to the City of Bil	at this facility: llings Landfill

5. Clean Water Diversion Practices
Describe how clean water is diverted from production area: Berms on the east and north side prevent water from entering the production area. Grade of road and driveways on south and west side prevent water from entering the production area.
6. Prohibiting Animals and Wastes from Contact with State Waters  Describe how animals and wastes are prohibited from direct contact with state waters:  All animals are kept inside the yard pens. No animals have contact with state waters.
Describe how Chemicals and other contaminants are handled on-site:  No chemicals are used at the site.
7. Best Management Practice (BMPS)
Describe in detail all temporary, permanent and structural BMPS which will be used to control runoff of pollutants from facility's production area. Indicate the location of these measures. If BMPS are not installed include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces,, and waterways above and open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area: decreasing open lot surface area; repairing of adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.
Production Area BMP's Gutters on the sale barn prevent clean water from entering the production area. Drainage is maintained to insure runoff enters the storage pond. Livestock waterers are not allowed to run over.

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's land production area. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites;

never spray irrigating waste on to trozen ground: consulting with the Department prior to applying any							
liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.							
after manure application.	The next irrigation of		Fields are not irrigated on this after manure application P Index Assessment.				
Buffers	Yes No	Conservation Tillage	✓ Yes No				
Constructed Wetlands	Yes No	Grass Filter	Yes No				
Infiltration Field	☐ Yes ✓ No	Residue Management	☐ Yes ✓ No				
Set backs	✓ Yes No	Terrace	Yes No				
Other examples							
The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part 2 of the permit.  Has a guidance document been developed for the facility?  Yes No							
Certify the document add		irements:					
Implementation of the NN	friends-	Businessed					
Facility operation and ma	Section of a secti						
Record keeping and repor	· ·						
Sample collection and ana	- Insurance	ELDO-LICA STATE OF THE STATE OF					
Manure transfer	<b>✓</b> Yes						
	Provide name, date and location of most recent documentation: BLS NMP and Guidance Document, 2013, BLS Sale Barn						
If your answer to any of	If your answer to any of the above question is no, provide explanation:						

Section E – Land Application	
Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility	y?
Yes If yes, then the information requested in Section E must be provided.	
No If no, then provide an explanation of how animal waste at this facility are managed.	

### Photos and/or Maps

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"X 17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The location of any downgradient surface waters.
- The location of any downgradient open tile line intake structures
- The location of any downgradient sinkholes
- The location of any downgradient agricultural well heads
- The location of all conduits to surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field
- The soil type(s) present and their locations within the individual land application field(s)
- The location of buffers and setbacks around state surface waters, well heads, etc.

## **Land Application Equipment Calibration**

Describe the type of equipment used to land apply wastes and the calibration procedures:

See attached calibration protocol.

#### Manure Sampling and Analysis Procedures

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining rates for manure, litter, and process wastewater.

Manure Sample collection will occur according to ARM 17.30.1334

Other (describe)

### Soil Sampling and Analysis Procedures

Representative soil (composite) samples from the top 6 inches layer of soil for each field where manure will be applied must be analyzed for phosphorus content at least once every three years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater

Soil samples collection will occur according the methods in ARM 17.30.1334

Other (describe)

#### **Phosphorus Risk Assessment**

The permittee shall access the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or

may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

#### **Method Used**

Indicate which method will be used to determine phosphorus application:

Method A Representative Soil Sample

Method B - Phosphorus Index - will use 7 Index

## Method A - Representative Soil Sample

- a. Obtain one or more representative soil sample(s) from the field per 17.30.1334
- b. Have the sample analyzed for Phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm)
- c. Using the results of the Olsen P test, determine application basis according to the Table below.

#### Soil Test

Olsen P Soil Test Results (ppm)	Application Basis
<25.0	Nitrogen Needs of Crop
25.1 - 100.0	Phosphorus Needs of Crop
100.0 – 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application allowed

# Method B - Phosphorus Index

- a. Complete a phosphorus Index according to the crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections in Appendix A, please refer to the method as described in Natural Resource Conservation Service (NRCS), Agronomy Technical Note MT-77 (rev3), January 2006.
- b. Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

### **Total Phosphorus**

Total Phosphorus Index Value	Site Vulnerability to Phosphorus Loss
<11	Low
11-21	Medium
22-43	High
>43	Very High

c. Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	Application Basis
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

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NAME AND ADDRESS OF THE OWNER, TH	C 1-18	Cro	Commence of the Commence of th	Ye				
Field	None (0)	Low (1)	Medium (2)	High (4)	Very High	Risk Value	Weight	Weigh
Category Factor					(8)	(0,1,2,4,8)	Factor	Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15	QA> 10 for		X 1.5	
		,, ,.	20 (0.1, 0.9, ).	tons/ac/yr	erodible	į	х 1.5	1.5
		ľ			soils			. 0
Furrow	N/A	Tail water	QS> for erosion	QS> for	QA>6 for	2	X 1.5	3
Irrigation		recovery, QS>6	resistant soil	erodible soils	very erodible	-		3
Erosion		very erodible	}	}	soils			
		soils, or QS>10						
		other soils						
Sprinkler	All fields 0-		Medium spray	Medium .	Low spray	0	X 1.5	A .
Irrigation Erosion	1	on silty soils 3-		spray on clay				0
Erosion	sandy fields or field	15% slopes, large spray on	8% slopes, large	soils >8%	>8% slopes			
	evaluation	silty soils 8-	spray on clay soils >15%	slope, low spray on clay				
	indicates	1 '	slope, medium	soil 3-8%				
	little or no	spray on silt	spray on silt soil					
	runoff large	soils 3-8%	>15% slope	spray on				
	spray on	large spray on		silty soils				
	silts 3-8%	clay soil 3-15%		>15% slopes				
		slope	****					
Runoff Class	Negligible	Very Low or	Medium	High	Very High	l	X 0.5	× 5
Olson Soil		<20 ppm	20-40 ppm	40.00	. 60	(	VAF	<del></del>
Test P	***************************************	20 ppin	20-40 ppm 	40-80 ppm	>80 ppm	i	X 0.5	-5
Commercial	None	Placed with	Incorporated 42	Incorporated	Surface	<u> </u>	V 1 0	<u> </u>
i i	Applied	Planter or	Incorporated <3 months prior to	Incorporated >3 months	applied to	0	X 1.0	0
Application	пррисс	injection	planting or	before crop	pasture or			
Method		deeper than 2	surface applied	or surface	>3 months			
		inches	during growing	applied <3	before crop			
			season	months	emerges			
		· .		before crop		}		
				emerges				
Commercial		<30 lbs/ac	31-90 lbs/ac	91-150	>150 lbs/ac	A	X 1.0	_
	Applied	P205	P205	lbs/ac P205	P205	0		0
Application   Rate								
	None Applied	Injected	Incorporated <3	'	1	2		2
Application	Applied	1	months prior to	l .	applied to	-	V 1 C	-
Method		WEITES	surface applied	before crop or surface	pasture or >3 months		X 1.0	
			during growing	applied <3	before crop			
			season	months	emerges			
				before crop.	•			
	None	<30 lbs/ac	31-90 lbs/ac	91-150	>150 lbs/ac	41	X 1.0	, 1
	Applied	P205	P205	lbs/ac P205	P205	"/		"
Application								'
Rate								
- 1		200-1,000	100-200 feet	<100 feet	0 feet or	"	X 1.0	2
Concentrate		feet, or			application	2		1
Surface		functioning			are directly			
Vater Flow		grass			into	<b>\</b>	1	
		waterways in			concentrate			1
		concentrated surface water			d surface			
		Juliuce Water	l	ı	water flow	1	1	1
					areas.		1	

Nutrient Budget Worksheet Year: 2014 Crop: Grass Field identification:  $Q \in 1 - 1Q$ Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Phosphorus-Nitrogen-based Source of Application based information Application Crop Nutrient Needs, 125 1 MSU lbs/acre Credits from previous (-) 0 DEQ-9 2 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 21 production lbs/acre Nutrients supplied by 4 (-)commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in 5 0 (-) irrigation water, lbs/acre = Additional Nutrients 6 104 Needed, lbs/acre Total Nitrogen and 17 Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) 0.6 Nutrient Availability factor, 8 (x) for Phosphorus based DEQ-9 application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 104 above) Available Nutrients in 10-2 11 (/) Manure, lbs/ton or lbs/1000 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 10 gal/acre

Field:	C 4-32	- Cro	o: Grass	Ye	ar: 20	14		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils		QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes, large spray on silty soils 8-	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	*5
Olson Soi <b>l</b> Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	Ì	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 Ibs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	; ·	Surface applied to pasture or >3 months before crop emerges	2_	x 1.0	2
~	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Year: 2014 Crop: Grass Field identification: PC 4-32 Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application:Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of information Application based Application Crop Nutrient Needs, 125 1 MSU lbs/acre Credits from previous 0 2 (-)DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 36 production lbs/acre Nutrients supplied by 4 (-) commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in 5 0 (-) irrigation water, lbs/acre = Additional Nutrients 89 6 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) 0.6 Nutrient Availability factor, 8 for Phosphorus based DEQ-9 (x) application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal Additional Nutrients 10 needed, lbs/acre (calculated 89 above) Available Nutrients in 10-2 (/) Manure, lbs/ton or lbs/1000 11 gal (calculated above) = Manure Application 8.7 12 Rate, tons/acre or 1000 gal/acre

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Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weigh Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	İ	X 1.5	15
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils		QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes, large spray on silty soils 8-	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	× 5
Olson Soil Test P	**********	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
١ ١	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1 '	Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
· 1	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4)	X 1.0	4
Distance to Concentrate I Surface Water Flow		200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: Pc 5-6 Year: 2014 Crop: Grass Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application:Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 125 1 MSU lbs/acre Credits from previous (-) 2 0 DEQ-9 legume crops, lbs/ac Residuals from past manure 30 3 (-) DEQ-9 production lbs/acre Nutrients supplied by 4 (-) commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in 5 (-) 0 irrigation water, lbs/acre = Additional Nutrients 95 6 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 8 for Phosphorus based DEQ-9 (x) application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal Additional Nutrients 10 needed, lbs/acre (calculated 95 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10.2 gal (calculated above) = Manure Application 9.3 12 Rate, tons/acre or 1000 gal/acre

Field:	PC 7.9	Cro	o: Grass	Ye	ar: Z <i>i</i>	14		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	ĺ	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils		QS>for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes, large spray on silty soils 8-	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	× 5
Olson Soil Test P	100-100 Process III	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm		X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: pc 7-9 Year: 2014 Crop: Grass Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application:Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 125 1 MSU lbs/acre Credits from previous 0 DEQ-9 2 (-) legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 20 production lbs/acre Nutrients supplied by 0 4 (-)commercial fertilizer and Biosolids, lbs/acre Nutrients supplied in 5 (-) 0 irrigation water, lbs/acre = Additional Nutrients 6 105 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, Test 7 lbs/ton or lbs/1000 gal (from manure test) 0.6 Nutrient Availability factor, 8 for Phosphorus based DEQ-9 (x) application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 105 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10-2 gal (calculated above) = Manure Application Rate, tons/acre or 1000 12 10-3 gal/acre

Field:	PC 8	-식 Crop	o: Grass	Ye	ar: 20	14		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr		10-15 tons/ac/yr	QA> 10 for erodible soils	ĺ	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	× 5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	i	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1 '	Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: Pc 8-4 Year: 2014 Crop: Grass Expected Crop Yield:5 135 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 125 MSU 1 lbs/acre Credits from previous 2 0 DEQ-9 (-) legume crops, lbs/ac Residuals from past manure 18 (-) DEQ-9 3 production lbs/acre Nutrients supplied by 4 **(-)** commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in 0 5 (-) irrigation water, lbs/acre = Additional Nutrients 6 107 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 DEQ-9 8 (x) for Phosphorus based application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 107 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10-2 gal (calculated above) = Manure Application 10.5 12 Rate, tons/acre or 1000 gal/acre

Field:	PC 12	-12 Crop		Yea		THE RESERVE THE PROPERTY OF THE PERSON NAMED AND POST OF THE PERSON NAMED		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosi <b>o</b> n	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields O- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes,	8% slopes, large spray on clay soils >15%	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	*5
Olson Soil Test P	<del></del>	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches		Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: PC 12-12 Year: 2014 Crop: Grass Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Phosphorus-Source of Nitrogen-based Application based information Application Crop Nutrient Needs, 125 1 MSU lbs/acre Credits from previous 0 DEQ-9 2 **(-)** legume crops, lbs/ac Residuals from past manure (-) DEQ-9 3 24 production lbs/acre Nutrients supplied by commercial fertilizer and 0 4 (-) Biosolids, lbs/acre Nutrients supplied in 0 5 (-) irrigation water, lbs/acre = Additional Nutrients 6 101 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, Test 7 lbs/ton or lbs/1000 gal (from manure test) 0.6 Nutrient Availability factor, DEQ-9 8 (x) for Phosphorus based application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 101 above) Available Nutrients in (/) Manure, lbs/ton or lbs/1000 11 10.2 gal (calculated above) = Manure Application 9.9 Rate, tons/acre or 1000 12 gal/acre

Field:	15 36	Z& Crop	o: Grass	Yea	ar: Z <i>i</i>	14		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion		<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	l	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields O- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes, large spray on silty soils 8-	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	× 5
Olson Soil Test P	Statistical de Philosophie	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	i	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1	Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: PC 21-26 Year: 2014 Crop: Grass Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: 13 5 Method of Application:Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 125 1 · MSU lbs/acre Credits from previous 0 DEQ-9 2 (-) legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 23.8 production lbs/acre Nutrients supplied by 4 (-) commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in 0 5 (-)irrigation water, lbs/acre = Additional Nutrients 6 101 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) 0.6 Nutrient Availability factor, 8 DEQ-9 (x) for Phosphorus based application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 101 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000

Comments:

gal/acre

Field:	PC 22.	·SS Crop	o: Grass	Ye		<i>i</i> <sup>i</sup> <sup>i</sup>		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion		<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	15% slopes, large spray on silty soils 8-	Medium spray on clay soils 3- 8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	×5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm		X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: PC 22-58 Year: 2014 Crop: Grass Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of based Application information **Application** Crop Nutrient Needs, 125 1 MSU lbs/acre Credits from previous 0 DEQ-9 2 **(-)** legume crops, 1bs/ac Residuals from past manure (-) 3 DEQ-9 23 production lbs/acre Nutrients supplied by commercial fertilizer and 0 4 (-) Biosolids, lbs/acre Nutrients supplied in 0 5 (-) irrigation water, lbs/acre = Additional Nutrients 6 102 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 8 DEQ-9 (x) for Phosphorus based application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal Additional Nutrients 10 needed, lbs/acre (calculated 102 above) Available Nutrients in (/) Manure, lbs/ton or lbs/1000 11 10.2 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 10 gal/acre

Field:	) C Z4.			Ye		THE RESIDENCE OF THE PROPERTY		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	İ	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields O- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	i	X 0.5	<b>*</b> 5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	i	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Crop: Grass Field identification: PC 24-14 Year: 2014 Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 1 125 MSU lbs/acre Credits from previous (-) 0 2 DEQ-9 legume crops, lbs/ac Residuals from past manure 3 (-) DEQ-9 21 production lbs/acre Nutrients supplied by (-) commercial fertilizer and 0 4 Biosolids, lbs/acre Nutrients supplied in 5 0 (-) irrigation water, lbs/acre = Additional Nutrients 104 6 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 DEQ-9 8 for Phosphorus based (x) application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 104 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10.2 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 10.2 gal/acre

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Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weigh Risk
Soil Erosion		<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	ĺ	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes,	8% slopes, large spray on clay soils >15%	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	Hìgh	Very High	i	X 0.5	×5
Olson Soi <b>l</b> Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 Ibs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	2	X 1.0	Z
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrate d Surface Water Flow	1	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: PC 25-13 Year: 2014 Crop: Grass Expected Crop Yield:5 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application: Rear Discharge When will application occur; Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 125 MSU 1 lbs/acre Credits from previous 0 DEQ-9 2 (-)legume crops, lbs/ac Residuals from past manure (-) DEQ-9 3 23 production lbs/acre Nutrients supplied by commercial fertilizer and 0 (-) 4 Biosolids, lbs/acre Nutrients supplied in 0 5 (-) irrigation water, lbs/acre = Additional Nutrients 6 102 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, **Test** 7 lbs/ton or lbs/1000 gal (from manure test) 0.6 Nutrient Availability factor, DEQ-9 8 for Phosphorus based (x) application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal Additional Nutrients 10 needed, lbs/acre (calculated 102 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10.2 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 10

Comments:

gal/acre

Field:	PC 2-11	Cro	: Alfalf	ې Ye	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion		<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	ſ	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope		slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	<i>ن</i>	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	į	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	. 5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	O	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	i .	Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150  bs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Year: 2014 Crop: Alfalfa Field identification: PC 2-11 Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs. 336 1 MSU lbs/acre Credits from previous (-) 20 2 DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 3 44 DEQ-9 production lbs/acre Nutrients supplied by 4 (-) commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in (-) 5 0 irrigation water, lbs/acre = Additional Nutrients 6 212 Needed, Ibs/acre Total Nitrogen and 17 Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 8 (x) for Phosphorus based DEQ-9 application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 2/2 above) Available Nutrients in 10-2 Manure, lbs/ton or lbs/1000 11 (/)gal (calculated above) = Manure Application 21 12 Rate, tons/acre or 1000 gal/acre

Field:	263-14	Cro	o: Alfalf	۸ Yea	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weigh Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils		X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes,	spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	<i>ن</i>	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	ĺ	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	l.	X 0.5	.5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	O	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1	Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Crop: Alfalfa Field identification: PC 3-14 Year: 2014 **Expected Crop Yield:7** Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous 80 2 (-) DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 38 production lbs/acre Nutrients supplied by commercial fertilizer and 0 4 (-) Biosolids, lbs/acre Nutrients supplied in 5 0 (-)irrigation water, lbs/acre = Additional Nutrients 6 Needed, lbs/acre Total Nitrogen and 17 Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 DEQ-9 8 for Phosphorus based (x) application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 218 10 needed, lbs/acre (calculated above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10-2 gal (calculated above) = Manure Application 21 12 Rate, tons/acre or 1000 gal/acre

Field:	26 6-13	S Crop	: Alfalf	Year	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr		10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes, large spray on silty soils 8-	Medium spray on clay soils 3- 8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	į	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	- 5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	U	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1 '	Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

**Nutrient Budget Worksheet** Field identification: P 6 6-31 Year: 2014 Crop: Alfalfa Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous 2 (-) 80 DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 44 3 DEQ-9 production lbs/acre Nutrients supplied by 4 (-) commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in 5 (-) 0 irrigation water, lbs/acre = Additional Nutrients 6 212 Needed, lbs/acre Total Nitrogen and 17 Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 8 (x) for Phosphorus based DEQ-9 application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 212 above) Available Nutrients in (/) 11 Manure, lbs/ton or lbs/1000 10-2 gal (calculated above) = Manure Application 21 12 Rate, tons/acre or 1000

Comments:

gal/acre

Field:	19-10	Croj	o: Alfalf	🔨 Yei	ar: 2014			
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	ſ	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	8% slopes, large spray on clay soils >15%	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	U	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	į	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	U	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Year: 2014 Crop: Alfalfa Field identification:  $Q \subseteq Q = 10$ Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous (-) 2 80 DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 47 production lbs/acre Nutrients supplied by commercial fertilizer and 4 (-)0 Biosolids, lbs/acre Nutrients supplied in 5 (-) 0 irrigation water, lbs/acre = Additional Nutrients 204 6 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor. 0.6 DEQ-9 8 for Phosphorus based (x) application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 209 above) Available Nutrients in Manure, lbs/ton or lbs/1000 11 10.2 gal (calculated above) = Manure Application 20 12 Rate, tons/acre or 1000 gal/acre

Field: P	C 11-31	Cro	: Alfalf	< Year	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes,	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	U.	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	i	X 0.5	-5
Olson Soil Test P	AND THE RESIDENCE OF THE PARTY	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1.	X 0.5	. 5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	O	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1	Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Year: 2014 Crop: Alfalfa Field identification: Pc 11-31 **Expected Crop Yield:7** Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of based information Application Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous (-) 2 DEQ-9 90 legume crops, lbs/ac Residuals from past manure 3 (-)DEQ-9 47 production lbs/acre Nutrients supplied by 4 (-)commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in (-)0 5 irrigation water, lbs/acre = Additional Nutrients 6 209 Needed, lbs/acre Total Nitrogen and 17 Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 DEQ-9 8 for Phosphorus based (x) application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal Additional Nutrients 10 needed, lbs/acre (calculated 209 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10.2 gal (calculated above) = Manure Application 20 12 Rate, tons/acre or 1000 gal/acre

Field:	PC 13-1	/ Crop	: Alfalf	🔨 Yea	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Eros <b>io</b> n	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	sandy fields or field evaluation indicates little or no	Medium spray on silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	8% slopes, large	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	i	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	1 .	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	O	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Crop: Alfalfa Field identification: PC13-11 Year: 2014 Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of **Application** based information Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous 2 (-)90 DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 40 production lbs/acre Nutrients supplied by 4 (-) commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in 5 (-) 0 irrigation water, lbs/acre = Additional Nutrients 6 216 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 8 DEQ-9 (x) for Phosphorus based application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal Additional Nutrients 10 needed, lbs/acre (calculated 216 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10-2 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 21 gal/acre

Field:	PC 14-	<b>∛ Cro</b> ∣	: Alfalfa	Year	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	,	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1-5
Furrow Irrigation Erosion	<b>N/A</b>	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	U.	X 1.5	ð
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	į	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	, ,	Surface applied to pasture or >3 months before crop emerges	O	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1	Surface applied to pasture or >3 months before crop emerges	2_	x 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Crop: Alfalfa Year: 2014 Field identification: Pc 14-8 Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of based information Application Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous (-) KO 2 DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 48 production lbs/acre Nutrients supplied by 4 (-)commercial fertilizer and 0 Biosolids, lbs/acre Nutrients supplied in 5 (-) 0 irrigation water, lbs/acre = Additional Nutrients 208 6 Needed, lbs/acre Total Nitrogen and 17 Phosphorus in manure, 7 **Test** lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 DEQ-9 8 (x) for Phosphorus based application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 208 10 needed, lbs/acre (calculated above) Available Nutrients in Manure, lbs/ton or lbs/1000 11 (/) 10.2 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 てひ gal/acre

Field:	115-2	4 Crop	s: Alfalf	へ Ye				
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr		10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	silty soils 8-	on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	U	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	.5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches		Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	v	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1 '	Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: PC 15 - 24 Year: 2014 Crop: Alfalfa Expected Crop Yield:7 13-5 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Phosphorus-Source of Nitrogen-based Application based information Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous (-) 80 DEQ-9 2 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 43 production lbs/acre Nutrients supplied by commercial fertilizer and 0 4 (-) Biosolids, lbs/acre Nutrients supplied in 5 (-) 0 irrigation water, lbs/acre = Additional Nutrients 6 213 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor. 0.6 DEQ-9 8 for Phosphorus based (x) application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 213 10 needed, lbs/acre (calculated above) Available Nutrients in Manure, lbs/ton or lbs/1000 10.2 11 (/) gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 21 gal/acre

Appendix A: Phosphorus Index Worksheet	(Complete for each field and crop)

Field:	76-9	Cro	: Alfalf	en Yea	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes, large spray on silty soils 8-	Medium spray on clay soils 3- 8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	U.	X 1.5	ð
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	ĺ	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1.	X 0.5	. 5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	v 	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Year: 2014 Crop: Alfalfa Field identification: PC16-9 Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: Method of Application:Rear Discharge When will application occur: Sep-Oct Nutrient Budget Source of Nitrogen-based Phosphorusinformation Application based Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous (-) 80 DEQ-9 2 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 42 production lbs/acre Nutrients supplied by 0 4 (-)commercial fertilizer and Biosolids, lbs/acre Nutrients supplied in 5 0 (-) irrigation water, lbs/acre = Additional Nutrients 6 214 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, Test 7 lbs/ton or lbs/1000 gal (from manure test) 0.6 Nutrient Availability factor, 8 for Phosphorus based DEQ-9 (x) application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 214 above) Available Nutrients in (/) Manure, lbs/ton or lbs/1000 11 10-2 gal (calculated above) = Manure Application 21 Rate, tons/acre or 1000 12 gal/acre

Field:	L 17-26	Croj	o: Alfalf	< Ye	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weigh Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes,	8% slopes, large spray on clay soils >15%	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	<i>ن</i>	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	1	X 0.5	-5
Olson Soil Test P	Uniform the square beauty	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	.5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	O	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 Ibs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1	Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

<b>7</b> . T	hand a rad	Pudgat Wantahaat			
		Budget Worksheet	2014	<sub>rop:</sub> Alfalfa	
		entification: QC 17-26 Year	2014	rop; Allalia	
		d Crop Yield:7	1	*1	<i>p</i>
		rus index results or Phosphorus	<u></u>	soil test: 13.3	<b>)</b>
		of Application:Rear Discharg	<u>e</u>		
-		ill application occur:Sep-Oct		T 54	
Nut	trient	Budget	Nitrogen-based Application	Phosphorus- based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	336		MSU
2	(-)	Credits from previous legume crops, lbs/ac	80		DEQ-9
3	(-)	Residuals from past manure production lbs/acre	40		DEQ-9
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	0		
5	(-)	Nutrients supplied in irrigation water, lbs/acre	0		
6		= Additional Nutrients	- 1/		
6		Needed, lbs/acre	216		
7		Total Nitrogen and Phosphorus in manure, Ibs/ton or Ibs/1000 gal (from manure test)	17		Test
8	(x)	Nutrient Availability factor, for Phosphorus based application use 1.0	0.6		DEQ-9
9		= Available Nutrients in Manure, lbs/ton or lbs/1000 gal	10.2		
10		Additional Nutrients needed, lbs/acre (calculated above)	216		
11	(/)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)	10.2		
12		= Manure Application Rate, tons/acre or 1000 gal/acre	21		

Field:	PC 18-7	L/ Croj			COMMUNICATION CONTRACTOR AND ADDRESS OF THE PARTY OF THE			
Field	None (0)	Low (1)		High (4)		•		Weight
Category Factor					(8)	(0,1,2,4,8)	Factor	Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible  soils		X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils		QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes,	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	<i>U</i>	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	1	X 0.5	-5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	- 5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	ט	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	, ,	Surface applied to pasture or >3 months before crop emerges	2_	X 1.0	2
- 1	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow		200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Field identification: Pc (8-21 Year: 2014 Crop: Alfalfa Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: 13.5 Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous 80 2 (-)DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 3 DEQ-9 production lbs/acre Nutrients supplied by commercial fertilizer and 0 4 (-) Biosolids, lbs/acre Nutrients supplied in (-) 0 5 irrigation water, lbs/acre = Additional Nutrients 6 210 Needed, lbs/acre Total Nitrogen and 17 Phosphorus in manure, 7 Test lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 DEQ-9 8 (x) for Phosphorus based application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 210 above) Available Nutrients in (/) Manure, lbs/ton or lbs/1000 11 10.2 gal (calculated above) = Manure Application 21 12 Rate, tons/acre or 1000

Comments:

gal/acre

None (0)	Low (1)	Medium (2)	High (4)	Very High	Risk Value	Weight	Weight
NA	<del></del>			(8)	(0,1,2,4,8)	Factor	Risk
	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
N/A	Tail water recovery, Q5>6 very erodible soils, or Q5>10 other soils		QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
All fields O- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silt soils 3-8% large spray on	on clay soils 3- 8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	soils >8% slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Negligible	Very Low or Low	Medium	High	Very High	1	X 0.5	-5
and related and desilier rap top	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	2	X 0.5	į
None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
None Applied	Injected deeper than 2 inches	ł		Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	2/
>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2
	3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%  Negligible  None Applied  None Applied  None Applied  None Applied  >1,000 feet	All fields O- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8% large spray on silts 3-8% large spray on silts 3-8% large spray on silts 3-8% large spray on clay soil 3-15% slope Negligible Very Low or Low	All fields 0- 3% slope, all sandy fields or field evaluation silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silty soils 3- 15% slope, low soils >15% slope, medium spray on silts 3-8% slope, low spray on silt soils 3-8% slope, medium spray on silts 3-8% slope Negligible Very Low or Low capplied Planter or injection deeper than 2 inches months prior to planting or surface applied during growing season  None Applied P205 P205   All fields O-3% slope, all sandy fields or field evaluation indicates spray on silt soils 3-8% slope, large spray on silt soils 3-8% slope, medium spray on silt soils 3-8% slope, medium spray on silt soils 3-8% slope, medium spray on silt soils 3-8% slope. Megligible very Low or Low 20 ppm 20-40 ppm 40-80 ppm Very Low or Injection deeper than 2 inches 21-90 lbs/ac P205  None Applied P205 P205 P205 P205 P205 P205 P205 P205	All fields 0- 3% slope, all 15% slopes, or field large spray on evaluation silty soils 8- 15% slope, low spray on clay soils >15% slope, low spray on silt soils slope, low spray on clay soils >15% slope spray on silt soils >15% slope spray on silt soils 3-8% slope slope, low spray on clay soils >15% slope spray on silt soils >15% slope spray on clay soil 3-8% slopes slope, low spray on clay soils -8% slopes spray on clay soils -8% slopes slope, low spray on clay soils -8% slope, low spray on clay soils -8% slope, low spray on clay soils -8% slope, low spray on clay soils -8% slope, low spray on clay soils -8% slope, low spray on clay soils -8% slope, low spray on clay soils -8% slope, low spray on clay soils -8% slope. low spray on clay soils -8% slope soil s-8% slope. low spray on silt soil slope, low spray on clay soils -8% solope soil s-8% slope soil s-8% soil s-8% solope soil s-8% soil s-8% soil s-8% s	All fields O- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8% slope Negligible Very Low or Low 220 ppm Very Low or deeper than 2 inches  None Applied A	All fields 0-   All fields 0	

Nutrient Budget Worksheet Year: 2014 Crop: Alfalfa Field identification: PC 19-6 Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of **Application** based information Application Crop Nutrient Needs, 336 1 MSU lbs/acre Credits from previous (-) 2 80 DEQ-9 legume crops, lbs/ac Residuals from past manure (-) 3 43 DEQ-9 production lbs/acre Nutrients supplied by commercial fertilizer and 0 4 (-)Biosolids, lbs/acre Nutrients supplied in 0 5 (-) irrigation water, lbs/acre = Additional Nutrients 6 2-13 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, Test 7 lbs/ton or lbs/1000 gal (from manure test) 0.6 Nutrient Availability factor, DEQ-9 8 for Phosphorus based (x) application use 1.0 = Available Nutrients in 10.2 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 213 above) Available Nutrients in Manure, lbs/ton or lbs/1000 11 (/) 10.2 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 21 gal/acre

Field:	C 20-	49 Crop	o: Alfalf	ې Yea	ar: 20	19		****
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr		10-15 tons/ac/yr	QA> 10 for erodible soils	1	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	on silty soils 3- 15% slopes, large spray on silty soils 8-	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	l	X 0.5	-5
Olson Soil Test P	ner semin Associate da Lab	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	2	X 0.5	1
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	, ,	Surface applied to pasture or >3 months before crop emerges	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	6
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1 .	Surface applied to pasture or >3 months before crop emerges	2	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	4	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

Nutrient Budget Worksheet Crop: Alfalfa Field identification: Pc 20-49 Year: 2014 Expected Crop Yield:7 Phosphorus index results or Phosphorus application from soil test: Method of Application: Rear Discharge When will application occur: Sep-Oct Nutrient Budget Nitrogen-based Phosphorus-Source of information based Application Application Crop Nutrient Needs, 336 MSU 1 lbs/acre Credits from previous (-) QO DEQ-9 2 legume crops, lbs/ac Residuals from past manure 3 (-) DEQ-9 45 production lbs/acre Nutrients supplied by commercial fertilizer and 0 4 (-)Biosolids, lbs/acre Nutrients supplied in 0 (-) 5 irrigation water, lbs/acre = Additional Nutrients 6 Needed, lbs/acre 17 Total Nitrogen and Phosphorus in manure, Test 7 lbs/ton or lbs/1000 gal (from manure test) Nutrient Availability factor, 0.6 DEQ-9 for Phosphorus based 8 (x) application use 1.0 10.2 = Available Nutrients in 9 Manure, lbs/ton or lbs/1000 gal **Additional Nutrients** 10 needed, lbs/acre (calculated 211 above) Available Nutrients in 11 (/) Manure, lbs/ton or lbs/1000 10.2 gal (calculated above) = Manure Application 12 Rate, tons/acre or 1000 21 gal/acre

Field:	PC 23-	식/ Cro	o: Alfalf	< Year	ar: 2014	1		
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion		<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	ı	X 1.5	1-5
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	2	X 1.5	3
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes	U	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	ĺ	X 0.5	-5
Olson Soil Test P	10 (m) 20 (m) 10 (m) A4	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 0.5	-5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges	U	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	1 '	Surface applied to pasture or >3 months before crop emerges	Zecoro.	X 1.0	2
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	2/	X 1.0	4
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	2	X 1.0	2

		Budget Worksheet			
-	_		<sub>:</sub> 2014 C	<sub>rop:</sub> Alfalfa	
		d Crop Yield:7		.,	
Pho	ospho	rus index results or Phosphorus	s application from	soil test: /3-2	
Me	thod	of Application:Rear Discharg	<u>e                                    </u>		The state of the s
W	ien w	ill application occur:Sep-Oct			
Nu	trient	Budget	Nitrogen-based	Phosphorus-	Source of
			Application	based	information
				Application	
1		Crop Nutrient Needs,	336		MSU
	ļ	lbs/acre	A44000		
2	(-)	Credits from previous	80		DEQ-9
		legume crops, lbs/ac	3 -		
3	(-)	Residuals from past manure	54		DEQ-9
	(7)	production lbs/acre	3 1		
		Nutrients supplied by			
4	(-)	commercial fertilizer and	0		
	ļ	Biosolids, lbs/acre			
5	(-)	Nutrients supplied in	0		
<u> </u>	()	irrigation water, lbs/acre			
6		= Additional Nutrients	202		
		Needed, lbs/acre			
			17		
		Total Nitrogen and	1/		
7		Phosphorus in manure,			Test
		lbs/ton or lbs/1000 gal			
		(from manure test) Nutrient Availability factor,	0.6		
8	(x)	for Phosphorus based	0.0		DEQ-9
U	(^)	application use 1.0			
	<b> </b>	= Available Nutrients in	10.2		
9		Manure, lbs/ton or			
		lbs/1000 gal			
		3			
		Additional Nutrients			
10		needed, lbs/acre (calculated	202		
		above)			
		Available Nutrients in			
11	(/)	Manure, lbs/ton or lbs/1000	10-2		
		gal (calculated above)			
		= Manure Application			
12		Rate, tons/acre or 1000	20		
		gal/acre			

THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TRANSPORT	approximate and provide the second contract of	-119 Crop		Ye	data and make the complete the state of			
Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weigh Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils	O	X 1.5	0
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All fields 0- 3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3- 15% slopes, large spray on silty soils 8- 15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	spray on silt soil >15% slope	soils >8% slope, low spray on clay soil 3-8%	Low spray on clay soils >8% slopes	0	X 1.5	0
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High	(	X 0.5	.5
Olson Soil Test P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	(	X 0.5	0.5
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season		Surface applied to pasture or >3 months before crop emerges	O	X 1.0	٥
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	i	Surface applied to pasture or >3 months before crop emerges	8	X 1.0	8
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205		X 1.0	l
Distance to Concentrate d Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	O feet or application are directly into concentrate d surface water flow areas.	0	X 1.0	Ò

Nu	Nutrient Budget Worksheet 119									
Fie	Field identification: PC Siewert Year: 2014 Crop: Czrass									
Ex	Expected Crop Yield: 2 to ~ 5									
Ph	Phosphorus index results or Phosphorus application from soil test: (C)									
Me	Method of Application: Zear Discharge									
Wi	When will application occur: Sep - Oct									
Nutrient Budget Nitrogen-based Phosphorus-Source of Application based information										
			Application	Application	miomation					
1		Crop Nutrient Needs,	50		Msa					
<u> </u>	<u> </u>	lbs/acre	<u> </u>							
2	(-)	Credits from previous legume crops, lbs/ac	0		DEO-9					
3	()	Residuals from past manure			000					
	(-)	production lbs/acre	5		D50-7					
		Nutrients supplied by								
4	(-)	commercial fertilizer and	$\mathcal{O}$							
	<u> </u>	Biosolids, lbs/acre								
5	(-)	Nutrients supplied in	0							
ļ	irrigation water, lbs/acre									
6		= Additional Nutrients Needed, lbs/acre	45							
		7.100000 j. 18.57 t.								
		Total Nitrogen and								
7		Phosphorus in manure,	Charleson .		(BETTERNES BELLERS ).					
'		lbs/ton or lbs/1000 gal	17		1857					
		(from manure test)								
		Nutrient Availability factor,	, ,							
8	(x)	for Phosphorus based	0.6		DEQ-9					
ļ		application use 1.0								
		= Available Nutrients in								
9		Manure, lbs/ton or	10.2							
-		lbs/1000 gal								
<u> </u>		Additional Nutrients								
10		needed, lbs/acre (calculated	41							
10		above)	45							
		Available Nutrients in								
11	(/)	Manure, lbs/ton or lbs/1000	10 7							
	\ /	gal (calculated above)	10-2							
		= Manure Application								
12		Rate, tons/acre or 1000	4.4							
		gal/acre	/ /							

### Section F - CERTIFICATION

Permittee Information: This form must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

### All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

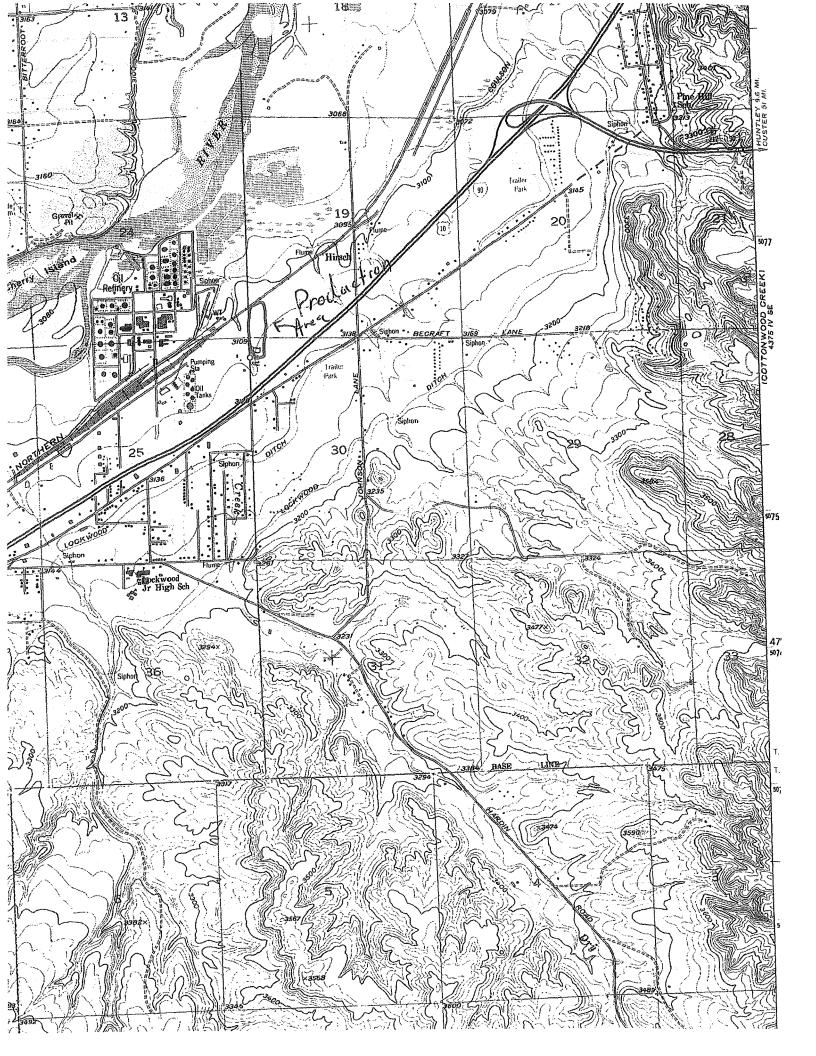
A. Name (Type or Print)  William Cook	
B. Title (Type or Print)  Acros of the control of t	C. Phone No. マイミー4718 /
D. Signature	E. Date Signed
William & Coss	10-28-13

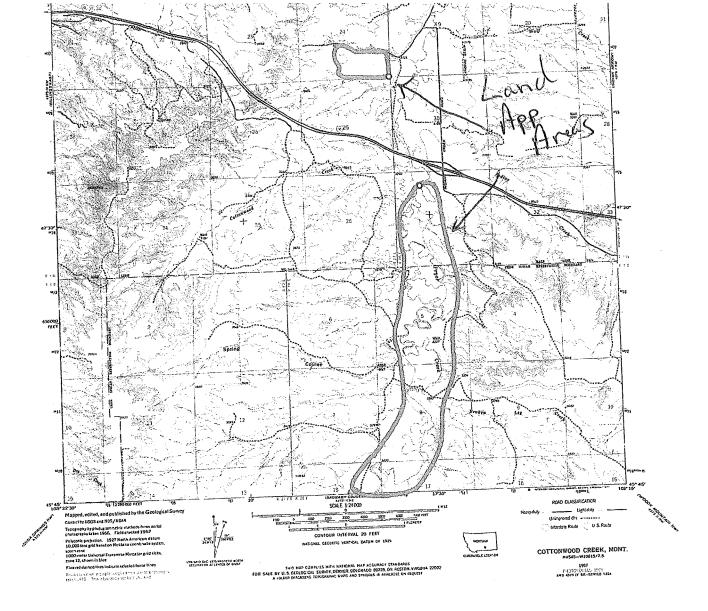
The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form and the applicable fee to:

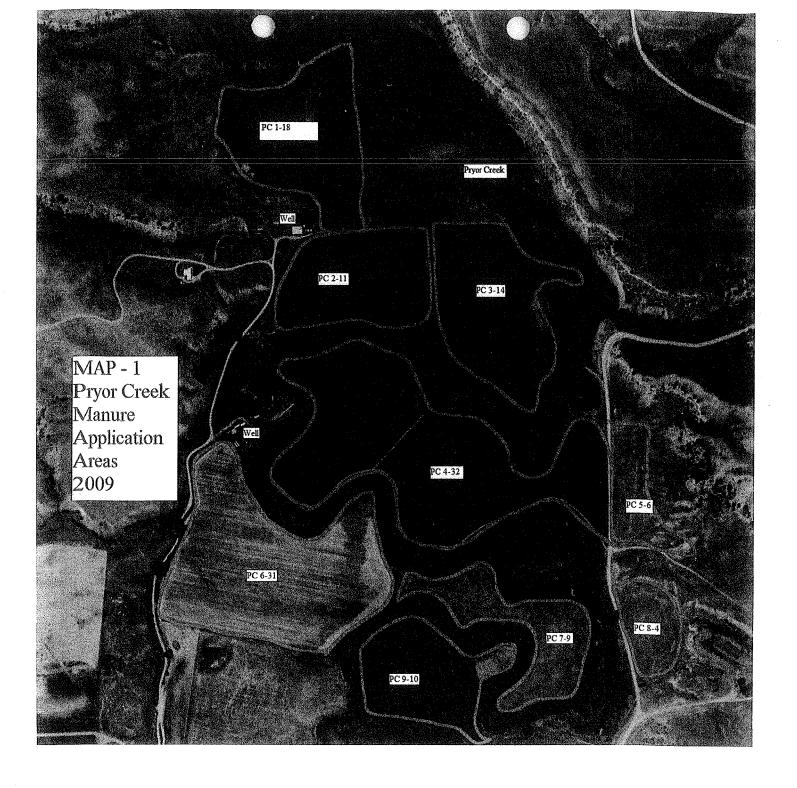
Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

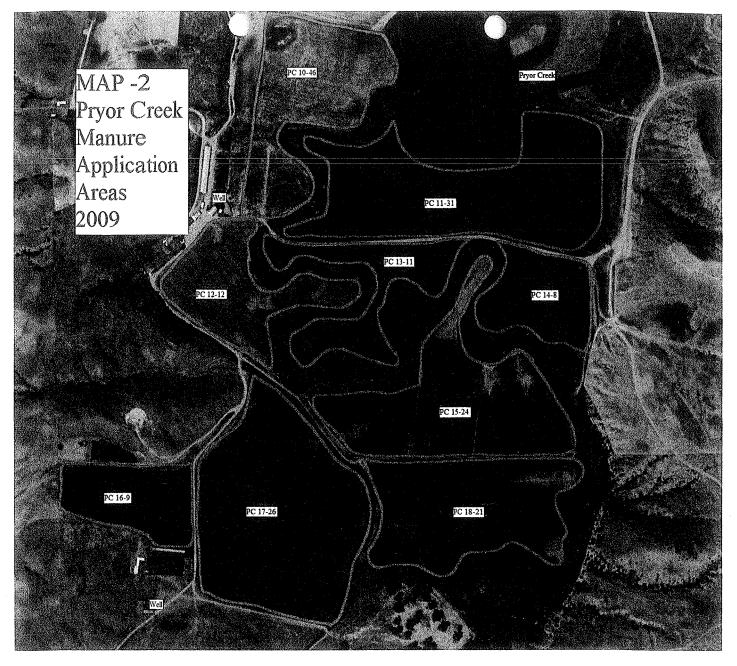
OCT 29 2013

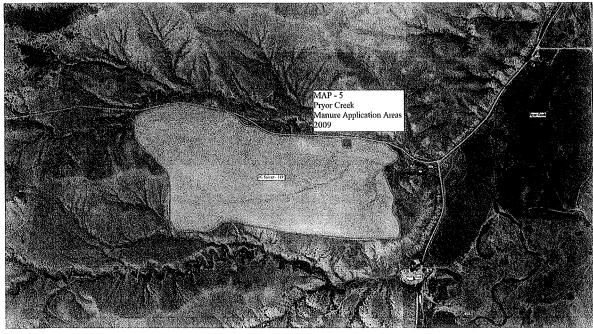
DEGINAPE
PERMITTING & COMPLIANCE DIV.

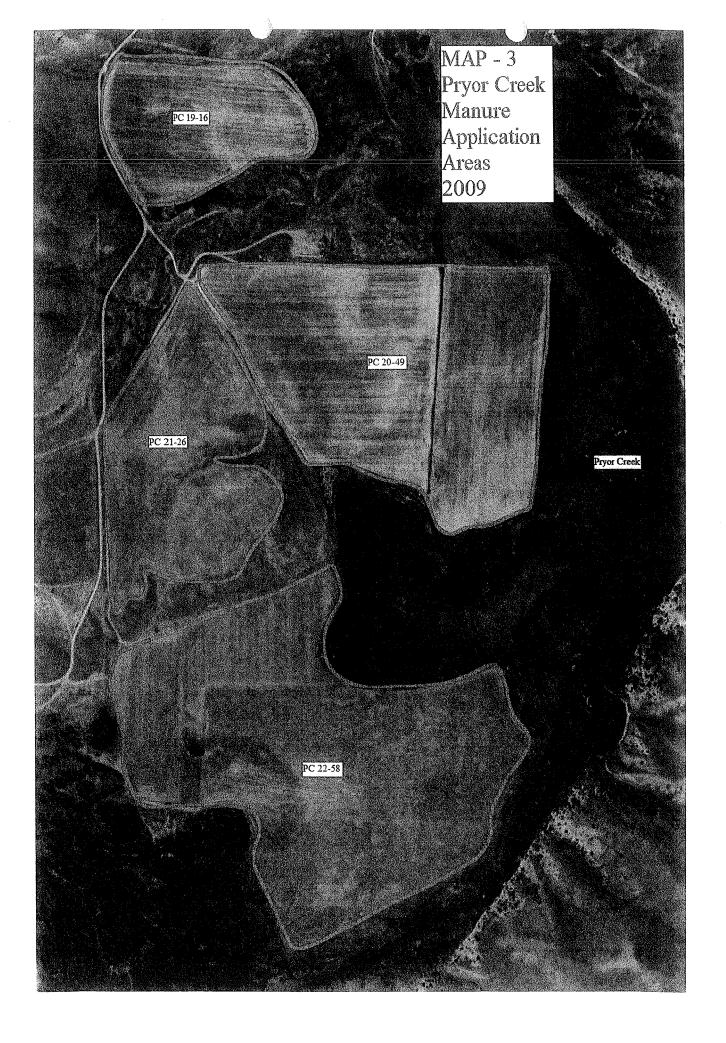


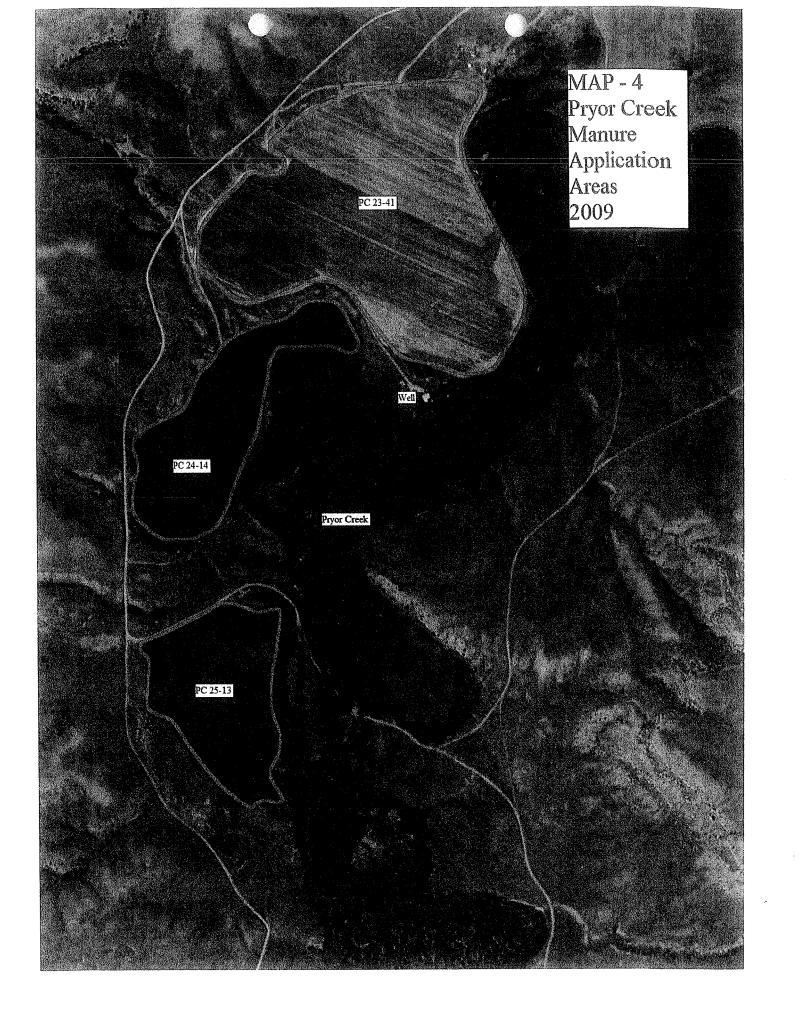








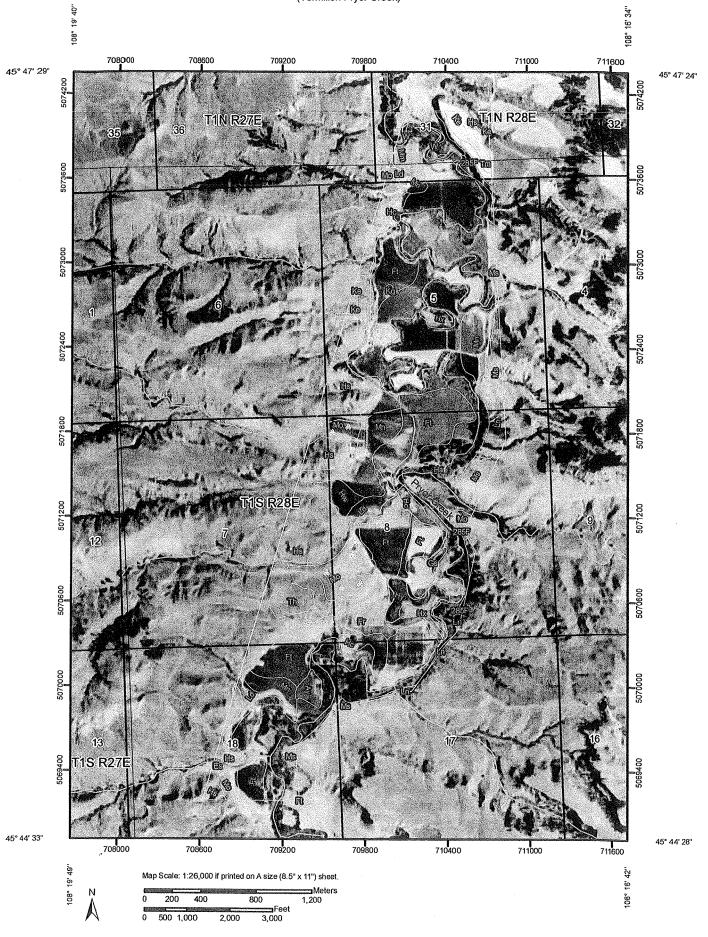




Soil Map—Yellowstone County, Montana (Vermilion Pryor Creek Siewert Field)

# **Map Unit Legend**

Yellowstone County, Montana (MT111)							
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI				
81B	Delpoint-Cabbart loams, 2 to 8 percent slopes	15.3	9.3%				
Hs	Hilly, gravelly land	5.0	3.1%				
Kn	Kyle silty clay, 4 to 7 percent slopes	43.5	26.3%				
Ln	Lismas clay, 15 to 35 percent slopes	28.5	17.3%				
Lo	Lohmiller silty clay, 3 to 7 percent slopes	44.2	26.8%				
My	Midway-Shale outcrop complex	0.1	0.1%				
PI	Pierre-Lismas clays, 7 to 15 percent slopes	28.4	17.2%				
Totals for Area of Interes	st	165.0	100.0%				

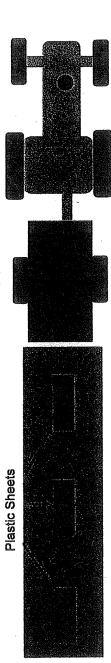


# **Map Unit Legend**

Yellowstone County, Montana (MT111)								
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI					
285F	Blacksheep, dry-Cabbart, dry-Rock outcrop, complex, 8 to 60 percent slopes	16.4	1.2%					
Ay	Arvada-Bone clays, 0 to 1 percent slopes	8.2	0.6%					
Es	Elso-Lohmiller complex, 15 to 35 percent slopes	2.2	0.2%					
Fr	Fort Collins and Thurlow clay loams, 0 to 1 percent slopes	19.6	1.5%					
Ft	Fort Collins and Thurlow clay loams, 1 to 4 percent slopes	180.7	13.5%					
Gs	Grail silty clay, 0 to 1 percent slopes	3.1	0.2%					
На	Haverson loam, 0 to 1 percent slopes	526.7	39.2%					
Нс	Haverson clay loam, 0 to 1 percent slopes	37.7	2.8%					
Hs	Hilly, gravelly land	200.6	14.9%					
Hw	Hydro-Arvada clay loams, 0 to 2 percent slopes	12.9	1.0%					
Hx	Hysham-Laurel loams, 0 to 2 percent slopes	13.6	1.0%					
Ну	Hysham-Laurel silty clay loams, 0 to 2 percent slopes	23.8	1.8%					
Ke	Keiser silty clay loam, 1 to 4 percent slopes	16.6	1.2%					
Kg	Keiser silty clay loam, 4 to 7 percent slopes	0.9	0.1%					
Ld	Lambert soils, 7 to 35 percent slopes	37.4	2.8%					
Ln	Lismas clay, 15 to 35 percent slopes	20.0	1.5%					
Mm	McRae loam, 0 to 1 percent slopes	6.6	0.5%					
Mn	McRae loam, 1 to 4 percent slopes	96.0	7.2%					
Мо	McRae loam, 4 to 7 percent slopes	60.5	4.5%					
Ms	McRae-Bainville loams, 7 to 15 percent slopes	33.1	2.5%					
Th	Toluca clay loam, 1 to 4 percent slopes	14.2	1.1%					
Tm	Toluca clay loam, 4 to 7 percent slopes	4.3	0.3%					
W	Water	7.1	0.5%					
Totals for Area of Inte	rest	1,342.5	100.0%					

# Calibration of Rear Discharge "Box" Spreader if Capacity is Unknown,

- Cut three or more sheets of equally sized plastic. 22 square feet (3' x 7'4" or 4' X 5'6") is preferred
- b. Weigh empty 5 gallon bucket plus one plastic sheet on a scale:
- c. Lay sheets in field with edges secured by stones or other heavy objects.
- d. Drive tractor at normal speeds and discharge manure at typical rates over plastic sheets. , and spreader settings: engine RPM: Record tractor gear:



- e. Check the sheet. Did a reasonably representative application rate fall on the plastic sheet?
- f. Carefully fold individual sheets without losing manure and place each sheet in separate buckets. bs. Bucket 3: lbs. Bucket 2: Weigh each bucket. Bucket 1:
- Subtract weight of empty bucket and plastic (step b) to determine net manure weight is each bucket. တ်
  - lbs. Bucket 3: Bucket 2: S O Net manure weight for Bucket 1:
- h. Calculate average weight of buckets.
- Average Net Manure Weight:
- i. Calculate application rate. Tons per Acre = (Net Manure Weight imes 22)  $\div$  area of plastic sheet (ft<sup>2</sup>) If plastic sheet = 22 ft2, then Tons per Acre = Net Manure Weight